



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/735,664 | 12/14/2000 | Koji Sahashi | 100725-00026 | 7133 |

7590

04/15/2003

ARENT FOX KINTNER PLOTKIN & KAHN, PLLC
Suite 600
1050 Connecticut Avenue, N.W.
Washington, DC 20036-5339

EXAMINER

BINDA, GREGORY JOHN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3679

DATE MAILED: 04/15/2003

20

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/735,664

Applicant(s)
Sahashi et al

Examiner
Greg Binda

Art Unit
3679



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Mar 14, 2003
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above, claim(s) 1-8, 16, and 19-38 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 9, 10, 12-15, 17, and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 3679

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed Mar 14, 2003 in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Jan 28, 2003 has been entered.

Election/Restriction

3. Claims 1-8, 16 & 19-38 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election of Species III (Figs. 14-20) was made **without** traverse in Paper No. 8.

Claim Rejections - 35 U.S.C. § 112

4. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 3679

a. Claim 9, line 8 recites the limitation, “a projection” but it is not clear what element this “projection” is a projection of.

b. Claim 9, line 8 recites the limitation, “a projection above and edge surface of said inner joint ring”. It’s not clear from the claim or the drawings what constitutes “above” since there does not appear to be anything projecting “above” inner ring 50. (Note: the drawings do show the intermediate shaft 24 projecting into and *beyond* the inner joint ring 50.)

Claim Rejections - 35 U.S.C. § 103

5. Claims 9 & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over GKN. GKN shows on page 16 (see the third embodiment from the top in Fig. B) a drive wheel bearing assembly having an outboard (because it is shown furthest from the center of the page) fixed type constant velocity universal joint (“FIXED JOINT”) coupled to a wheel bearing (see picture above Fig. B), mounted to one end portion of an intermediate shaft; an inboard (see also “inboard joint” on page 12) sliding type constant velocity universal joint (“DOUBLE OFFSET JOINT”) coupled to a differential (see “transmission side” on page 12 and the picture above Fig. B), mounted to the other end portion of the intermediate shaft; and a seal boot mounted on the other end of the intermediate shaft. GKN does not expressly disclose the length of the allowable plunge of the sliding type constant velocity joint is set substantially equal to the sum of the width of the fixed joint’s inner joint ring and the length of the portion of inner shaft projecting beyond that inner ring. However, it has generally been recognized that the optimization of proportions in a prior art

Art Unit: 3679

device is a design consideration requiring only routine skill in the art. *In re Reese*, 290 F.2d 839, 129 USPQ 402 (CCPA 1961). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the proportion of the allowable plunge to match the width of the fixed joint's inner ring and the projecting portion of the inner shaft, as such practice is a design consideration within the skill of the art.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over GKN in view of Mizukoshi et al, US 5,975,767, (Mizukoshi). GKN shows or makes obvious all the limitations of the claim except a hollow portion between the stem and bell portions of the fixed joint. In col. 13, lines 18-21, Mizukoshi teaches making a hollow portion between the stem and bell portions of a fixed joint in order to provide a lightweight joint. It would have been obvious to one of ordinary skill in the art to modify the drive wheel assembly of GKN by making the fixed joint with a hollow portion between its stem and bell portions in order to provide a lightweight joint as taught by Mizukoshi.

7. Claims 12, 15, 17 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over GKN in view of Fukumura, US 5,607,241. GKN shows or makes obvious all the limitations of the claims except the wheel bearing plastically connected to the fixed joint and bearing races on a hub ring, a separate ring and directly on the fixed joint. In Figs. 1 & 2 Fukumura shows a drive wheel bearing assembly comprising a wheel bearing 3 plastically connected (as at weld 5) to a

Art Unit: 3679

fixed joint 1 and bearing races 7 on a hub ring 3, a separate ring 13 (in Fig. 2) and directly on the fixed joint 1 (in Fig. 1). In col. 2, lines 6-10, Fukumura teaches making a drive wheel bearing assembly in this way in order to provide a small compact wheel bearing assembly which can be assembled easily while keeping a high reliability of connection. It would have been obvious to one of ordinary skill in the art to modify the drive wheel bearing assembly of GKN by making the wheel bearing plastically connected to the fixed joint and bearing races on a hub ring, a separate ring and directly on the fixed joint in order to provide a small compact wheel bearing assembly which can be assembled easily while keeping a high reliability of connection as taught by Fukumura.

Allowable Subject Matter

8. Claim 11 is allowed.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,487,515 shows an end cap 38 with a communicating portion 39.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (703) 305-2869. The examiner can

Art Unit: 3679

normally be reached Monday through Thursday from 9:30 am to 7:00 pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne, can be reached on (703) 308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9326 (before final), (703) 872-9327 (after final) and (703) 872-9325 (customer service).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2168.



**GREGORY J. BINDA
PRIMARY EXAMINER**